

to 300 kilometers, and Malmström<sup>1</sup> presents evidence for wind transport up to 1000 kilometers. Dyakowska<sup>2</sup> calculates average limits of dispersal of pollen in kilometers for the following genera: *Fagus* (28), *Quercus* (65), *Ulmus* (77), *Alnus* (132), and *Salix* (218).

Although the data on distance of dissemination are inadequate, very few authors would venture to consider small percentages of pollen to be significant with respect to past areal limits of a species unless regional surveys also indicate the boundary or a conspicuous composition trend exists through the profile.

This criticism of the paper by Wilson and Webster is offered because of the realization that the science of pollen analysis can add valuable information to the history of forest composition and areas providing, however, that the peculiar sources of error of the method are adequately considered and only justified claims are made.

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## THE PERENNIAL HELENIMUM OF THE EDWARDS PLATEAU OF TEXAS

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WITH one exception, so far as known to us, the Heleniums growing on the Edwards Plateau are annuals and bloom in the spring. On August 18, 1937, a tall-growing, perennial Helenium blooming in midsummer and later, was collected at the edge of running water in Turtle Creek in Kerr County, Texas. The friend with me was familiar with *H. autumnale* L. as it grows in Mississippi, and he asserted that it was not that species. However, a leading botanist to whom material was sent so determined the plant. In using the key for Helenium in North American Flora, Vol. 34, Part 2, while checking this determination it was noted that our plant might just as well have been referred to *H.*

<sup>1</sup> "Degerö Stormyr. Untersuchungen eines nordschwedischen Moorkomplexes." Mitt. Forst. Versuchs. Schwedens 20.

<sup>2</sup> "Researches on the rapidity of the falling down of pollen of some trees." Acad. Polonaise Sci. Internatl. Bul. Ser. B (I): 155-168.

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*montanum* Nutt. Seemingly it would more nearly have fitted into *H. latifolium* Mill. than in either of the other two species. Our plant is intermediate in point of pappus between on the one hand both *H. autumnale* and *H. latifolium* and on the other hand *H. montanum*, and, without making allowances it would not exactly fit into any one of these species. From an examination of this material at the Herbarium of the University of Texas it seems probable that *H. autumnale* does not extend into Texas from either north or east, but that the other species do extend into Texas. *H. montanum* comes down into Texas on the High Plains and *H. latifolium* does likewise on the Blackland Prairies. We have seen this Helenium growing only along Turtle Creek, but Dr. Tharp has collected it along Bull Creek in Travis County on September 12, 1920, and in swamps in Gonzales County on August 15 and on October 18, both in the year of 1940. Thus it is seen not to be of common occurrence. From the Kerr County locality it is just in excess of a hundred miles in a northeasterly direction to the Travis County location and much the same distance in a southeasterly direction to the Gonzales County location, which is below the Edwards Plateau.

**HELENIMUM edwardsianum** n. sp. Plant a tall perennial, 1–2 m. high, branched above, densely short-pubescent; leaves lanceolate or oblanceolate, acute, tapering to the base, 7–12 cm. long, 1–2 cm. broad or more, shallowly glandular-denticulate, densely short-pubescent on both surfaces; heads radiate, corymbose; peduncles 3–6 cm. long; involucre bracts about 15, 7 mm. long, linear-lanceolate, densely short-pubescent; ray-flowers yellow, 1 cm. long or more, up to 8 mm. broad; disk globose, mostly 1 cm. in diameter or more; disk-corollas 2.5–3 mm. long, glandular-granuliferous; achenes 1 mm. long or more, hispid on the ribs; squamellae lanceolate, acuminate, 1 mm. long or more.

**HELENIMUM edwardsianum** sp. nov. Planta perennis, 1–2 m. alta, sursum ramosa, conferte brevi-pubescentibus; foliis lanceolatis vel oblanceolatis, acutis, basi cuneatis, 7–12 cm. longis, 1–2 cm. latis vel ultra, haud profunde glanduloso-denticulatis, utrinque conferte brevi-pubescentibus; capitulis radiatis, corymbosis; pedunculis 3–6 cm. longis; bracteis involucrelibus ca. 15, 7 mm. longis, lineari-lanceolatis, conferte brevi-pubescentibus; floribus radialibus luteis, 1 cm. longis vel ultra, ad 8 mm. latis; disco globoso, vulgo 1 cm. diametro vel latiore; disci corollis 2.5–3 mm. longis, glanduloso-granulatis; acheniis 1 mm. longis vel longioribus, costis hispidis; squamulis lanceolatis, acuminatis, 1 mm. longis vel longioribus.

Our plant is closely related to the three species, *autumnale*, *latifolium*, and *montanum*. *Edwardsianum* grows taller than do the other species; its leaves are not narrowly linear-lanceolate as Rydberg characterizes the leaves of *autumnale*; its squamellae are longer than is characteristic for *autumnale* and *latifolium* (both .7 mm. long) and are shorter than is characteristic for *montanum* (1.5 mm. long); its disk-corollas are relatively shorter, frequently no more than 2.5 mm. long as contrasted to the 3 mm. long in the other species; and its achenes are shorter than the 1.5 mm. in length given for these other species. As an intermediate plant between *autumnale* and *montanum* there possibly is indicated a closer relationship between these two species than has been acknowledged but, until such a relationship has been worked out, our plant may well be recognized as a distinct species.

The type specimen is designated as No. 24008, collected August 18, 1937, at the edge of running water on the banks of Turtle Creek, in Kerr County, Texas. It is deposited at the Gray Herbarium.

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TWO LATER HOMONYMS.—*POTENTILLA HYPARCTICA* Malte, var. **elator** (Abromeit), comb. nov. *P. emarginata* Pursh, Fl. Am. Sept. 253 (1814); Malte in RHODORA, xxxvi. 177 (1934); Polunin, Bot. Can. E. Arct. i. 275 (1940); not Desf. Tabl. Écol. Bot. 177 (1804). *P. emarginata*, c. *elator* Abromeit, Bot. Ergebn. B, 8 (1897).

*Potentilla emarginata* was based by Desfontaines upon *Fragaria sterilis* L. Although by the International Rules the name *P. emarginata* Desf. is illegitimate because Desfontaines did not take up the earlier specific name used by Linnaeus, it nevertheless invalidates the later *P. emarginata* Pursh. Malte in RHODORA, xxxvi. 173–178 (1934) discussed *P. emarginata* Pursh and its immediate allies. He then correctly treated as *P. emarginata* the southern plant of the group, which was described by Pursh from Labrador, collected by Kohlmeister, a plant which extends northward into the southern areas of the Arctic and southward